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| APPLICATION NO.             | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------|-------------|----------------------|---------------------|------------------|
| 10/075,784                  | 02/13/2002  | Ingo Blume           | 30394-CIP           | 9749             |
| 5179                        | 7590        | 10/29/2004           | EXAMINER            |                  |
| PEACOCK MYERS AND ADAMS P C |             |                      | DRODGE, JOSEPH W    |                  |
| P O BOX 26927               |             |                      | ART UNIT            |                  |
| ALBUQUERQUE, NM 871256927   |             |                      | PAPER NUMBER        |                  |

1723

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/075,784

Applicant(s)

BLUME ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Coplan et al patent 4,632,756, of record.

Coplan et al disclose a pressure vessel 10 (column 3, lines 37-40), feed connections 32,86 and filtrate connections 90,92 at either end of the vessel (column 1, line 68- column 2, line 1), both ends of individual longitudinally aligned membranes or modules 18 being open (see column 3, lines 43-44 and column 3, lines 11-13 specifically concerning 'open galleries formed in potting compound' and column 3, lines 30-32 concerning terminology 'modules'), the membranes comprising hollow fibers in bundles or capillaries (column 3, lines 11-12), outlets 108 and 110, membrane holders 20,80 and 82 at vessel opposite ends, and a feed-through conduit or pipe 104 that extends the entire length of the modules in the vessel and comprised of impermeable material (column 4, lines 8-16). If necessary, interior pipes or conduits 106,108 and 110 may also be considered "flow-through" pipes since they also extend the length of individual modules in the pressure vessel.

Regarding claim 7, pipe 104 must inherently be of relatively smooth, impermeable material to have the disclosed properties of providing support and providing flow-through of feed (column 4, lines 7-9).

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coplan et al in view of Eckman patent 5,470,469, also of record.

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Claims 3,5, and 6, as well as claims 8-11 differ in requiring a feed-through conduit annularly surrounding the membrane modules formed by the space between the filter membrane module housings and the vessel wall, or second such conduit. Eckman teaches such conduit 60 for "feed-through" of retentate R from the membranes (column 5, lines 40-57 and column 8, lines 5-13). It would have been obvious to one of ordinary skill in the art to have augmented the Coplan et al apparatus, by spacing the outer walls of the membrane modules from the interior wall of the vessel, so as to utilize such space for flow-through of retentate, as taught by Eckman, in order to facilitate a flow pattern that decreases tendency for hollow fibers to nestle and tendency for fouling, and also to enable a more compact arrangement of conduits for collection of retentate.

If necessary, claim terminology is deemed broad enough to read on any conduit or pipe that provides a space for flow of any of feed, permeate or retentate in association with the membrane modules, since no structure is recited effective to further limit to a particular fluid in the "flow-through conduit".

Regarding claims 6 and 11, Eckman also introduces spacers 53 (column 8, lines 5-13) to firmly hold the modules in position within the pressure vessel.

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Claims 6 and 10 differ in requiring the modules to be in a series arrangement, such arrangement being taught by Eckman in column 4, lines 60-67. It would have also been obvious to one of ordinary skill in the art to have modified the Coplan et al apparatus by coupling the disclosed longitudinally aligned membrane modules in series connection, as taught by Eckman, in order to increase conversion of permeate for a given volume of feed flow and result in a more purified permeate stream for end uses requiring highly purified fluids.

Applicant's arguments filed on October 8, 2004 have been fully considered but they are not persuasive. It is primarily argued that the central pipe 104 of Coplan et al is merely a structural feature, since it is interior pipe 106 that is providing the feed. Firstly, it is submitted that Coplan et al disclose pipe 104 optionally being utilized for feeding or extracting of fluids from the membranes. Pipe 106 can either be considered an integral part of surrounding pipe 104 or a pipe, that in itself, meets the concerned claim limitation.

Applicant's arguments with respect to claims 3-6 and 8-11 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

October 28, 2004

  
JOSEPH DRODGE  
PRIMARY EXAMINER